

AR46

# Denison



DENISON MINES LIMITED ANNUAL REPORT 1981







Mr. Stephen B. Roman greets Mr. C. Karamanlis, President of the Republic of Greece, on the occasion of the official opening of Greece's first oil and gas field.

PRINOS/SOUTH KAVALA  
PROJECT, GREECE  
OPENING CEREMONY  
MAY 24th, 1981

The ceremonial ribbon is cut by Mr. C. Karamanlis, President of the Republic of Greece, to inaugurate the Prinos/South Kavala development.



Flanking the Greek flag are those of the participants in this Canadian-American-West German consortium.



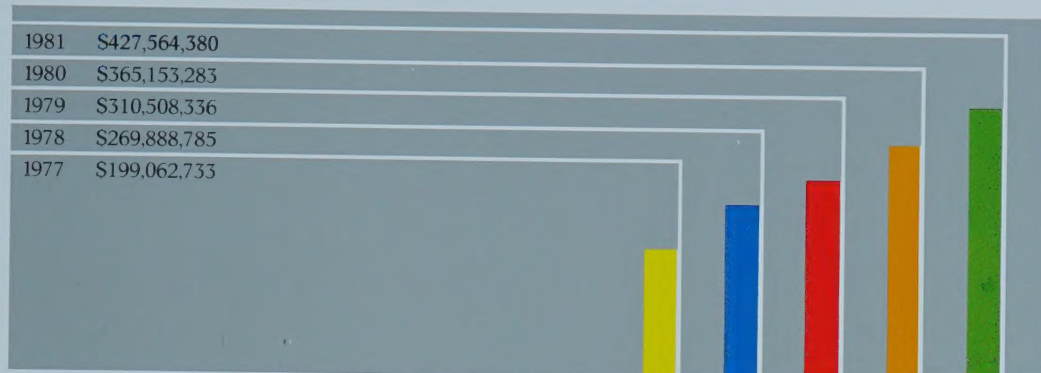
## 1981 HIGHLIGHTS

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- ☐ *Net earnings of \$62.4 million (\$3.41 per share), second highest in the Company's history.*
  - ☐ *Dividends of \$2.00 per share paid to shareholders in 1981, up from \$1.50 per share paid in 1980.*
  - ☐ *Prinos/South Kavala project in Greece reaches production of oil, gas and sulphur at near capacity rates.*
  - ☐ *Casablanca oil field, offshore Spain, continued producing oil while development drilling carried on from the newly installed permanent offshore platform.*
  - ☐ *Quintette Coal Limited signs sales agreements with Japanese customers and project construction begins including infrastructure elements.*
  - ☐ *Uranium expansion program at Elliot Lake now more than 75% complete.*
  - ☐ *New Brunswick potash project exploration shaft approaches the salt-potash horizon for detailed deposit examination.*
  - ☐ *Cement subsidiary broadens geographical and product base through acquisition of concrete products companies.*
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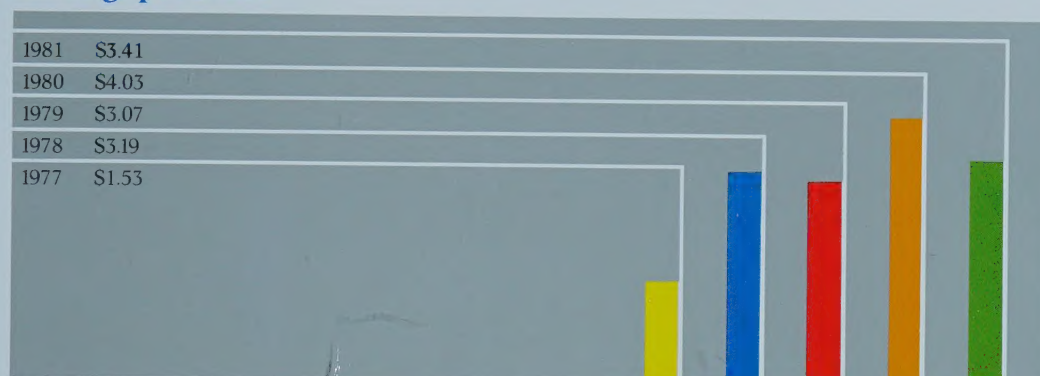
## FINANCIAL HIGHLIGHTS

### Sales



DENISON  
MINES LIMITED  
ANNUAL REPORT  
1981

### Earnings per Share



### Regular Dividends per Share



### Capital Expenditures





## To the Shareholders

Once again, it is our pleasure to report to you on the further growth of Denison Mines Limited as a broadly-based international resource company, uniquely equipped to meet the ever-changing demands of the international marketplace.

As we confidently look forward to the future, we must also reflect on our history and on the foundation upon which your Company has been built. During 1982, Denison will reach a milestone, as it marks 25 years of continuous production of uranium at Elliot Lake. While we diversify to increase our shareholders' interests, we remain committed to uranium and convinced of the increasingly important role nuclear energy will play throughout the world in the years ahead.

The first production of oil, gas and sulphur from Greece, the completion of a major expansion in our hydrometallurgical plant at Elliot Lake and the commencement of the construction of the facilities necessary for large scale coal production in northeastern British Columbia were among the significant events of 1981.

### Financial

Notwithstanding the depressed nature of the general economic environment, characterized by high inflation, indecisive and confusing actions by governments, weaknesses in world market prices of our products and record high interest rates, 1981 was a financially successful year for your Company. Earnings were second only to the record earnings of 1980 and revenues reached new highs.

Aided by the first full year of production from the offshore Spain oil field and initial production from the Prinos/South Kavala oil and gas fields, which began in mid-year and were only beginning to approach design rates by the end of the year, revenues reached a record level of \$427,564,380, an increase of 17% over 1980 revenues of \$365,153,283.

Consolidated net earnings for 1981 of \$62,385,796 (equal to \$3.41 per share) were the second highest in your Company's history, following the record level of \$73,698,757 (\$4.03 per share) of 1980. The 1981 earnings were adversely affected by a charge of \$0.56 per share after tax resulting from settlements of litigation proceedings in the United States. The settlement did not constitute any admission of liability by the Company, but was made to enable it to make more productive use of its financial and human resources.

Your Company continued its program of heavy capital expenditures to develop its many resource projects throughout the world and to expand existing operations. Capital expenditures of \$398,629,113, compared with \$406,486,668 in 1980, were principally related to the latter stages of the expansion of production facilities at the Elliot Lake uranium property, the substantial completion and placing into operation of the Prinos/South Kavala oil and gas fields and the start of construction for the development of the Quintette coal project. Lesser amounts were invested in the beginning of phase two development of the Casablanca oil field in Spain, the development of the Gulf of Mexico gas fields for production in early 1982 and continued shaft sinking at our potash operation in New Brunswick.

### Dividends

Once again your Company increased the amount of the dividends paid to its shareholders and continued with its unbroken record of dividend payments in every year since 1959. Dividends of \$2.00 per share were paid during the year compared with a total of \$1.50 per share for 1980.

### Outlook

Denison will continue to strive to maximize benefits for its shareholders and its employees as it has done in the past. In order to adapt to the changing economic and social conditions in the world today, it will be necessary to continually modify its approach to operations, growth plans and areas of business. Your Company's policy is to develop the major resource projects in which it is interested to enhance the near-term prospects for improved revenues and earnings while simultaneously looking throughout the world for that special combination of geological potential, an available labour force and, perhaps more important, a political climate which





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**Stephen B. Roman**  
Chairman and President





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**C. H. Frame**  
President,  
Mining Operations

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**E. B. McConkey**  
Vice-Chairman

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**M. H. Cochrane**  
Executive Vice-President,  
Finance and Administration

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**C. D. Parmelee**  
Executive Vice-President  
Corporate Affairs



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allows and encourages the effective operation of the free enterprise system. Denison's record with this policy in the past and its continued commitment to pursue this proven formula makes the future for your Company even more exciting than the developments of the past.

#### *Uranium*

Production from Denison's expanded uranium operation in Elliot Lake has been contracted for through to the year 2012, so it is actively proceeding to bring into production another uranium property in Australia. Longer term, your Company continues to evaluate uranium prospects throughout the world to identify successful development projects.

#### *Oil and Gas*

This is the fastest growing area of your Company's business and this growth is expected to continue in the future as its extensive exploration projects bear fruit. With oil and gas production in Canada, Greece, Spain and the Gulf of Mexico now realities, Denison looks to the future with exploration in the Philippines, the United States, Guyana and Cameroon — to name a few.

#### *Coal*

Extensive infrastructure development in British Columbia related to the Quintette coal property, where construction is now underway, greatly enhances the value of the reserves on the other coal properties that your Company manages in the area. Marketing efforts and further evaluation of these properties will continue.

#### *Potash*

In partnership with French and West German firms, work continues on the New Brunswick potash property leading to the preparation of the final feasibility report in mid-1982 with a production decision expected to be made immediately thereafter.

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#### **In Memoriam**

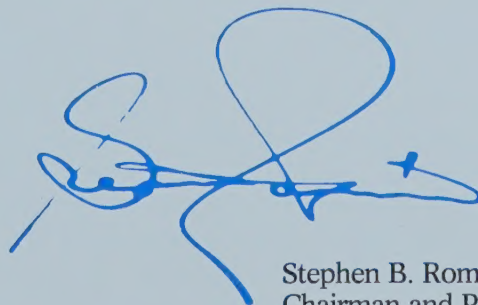
We are saddened by the passing of Mr. Frederick H. Jowsey during 1981. He was a member of a Canadian family of "mine-finders" — those special individuals who explore for new mineral sources. His passing renewed memories of the early excitement of the discovery of uranium at Elliot Lake. Mr. Jowsey was one of the original vendors of the Company's uranium property and was a director of Denison Mines from its earliest years. His optimism and warm humor are sadly missed.

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Sincere appreciation is expressed to employees, shareholders, associates and those many other individuals who have continued to support your Company.

On behalf of the Board of Directors,

Toronto, Canada  
January 13, 1982



Stephen B. Roman,  
Chairman and President



All surface construction in uranium expansion at Elliot Lake completed

Completion of all surface construction in the uranium expansion program and the successful commissioning of the new hydrometallurgical plant highlight uranium operations at Elliot Lake. The new plant, one of the most modern in the world mining industry, has a demonstrated processing capacity of 15,000 tons per day. The principal surface installations of the expansion are now in place to support an annual production rate of 6,000,000 pounds uranium oxide. Mine expansion will carry into 1985 with the completion of underground development at No. 3 Shaft which will service the rehabilitated Stanrock and Can-Met areas.

Operating costs rose substantially in 1981. Primary factors included delays in start-up and commissioning problems in the new hydrometallurgical plant; lower grade of ore from expanding mining operations; and higher costs for operating supplies, processing reagents and labour.

At the close of 1981 outstanding contracts called for delivery of more than 169,000,000 pounds of uranium oxide to Japan, Ontario and Spain. The expansion of uranium operations is solidly founded on long-term contracts with Ontario Hydro and Japan for uranium oxide to be delivered during the period 1982-2012. These long-term contracts provide stability and continuity for the Elliot Lake operation.

### Mining

Expansion of underground activities continued with a record 3,711,822 tons broken, some 24% above the previous year. New mining areas were established to the south of No. 2 Shaft and west of No. 1 Shaft. Development excavations necessary for expanded operations were completed in line with the long-term mining plan. The grade of ore hoisted was lower than in previous years, reflecting the preparation of areas for future mining operations. It is expected, however, that the grade will be maintained at existing levels over the next several years.

New drilling and haulage equipment incorporating the latest technical advances was purchased to convert the mechanized mining system to the lower stope heights that will become predominant. Special effort was made to improve the efficiency and safety of roof support systems. For this purpose, two mechanized, low profile, roof bolting test units manufactured to Denison's specifications are now undergoing production trials.

The completion and commissioning of the Kostuik conveyor in mid-year marked the end of the major expansion at No. 2 Shaft. All mining areas are now serviced with modern, high-capacity conveying systems. A fire on the Can-Met conveyor in November resulted in a small loss of production. However, a speedy completion of the necessary repairs minimized downtime.

### Milling

In 1981, Elliot Lake operations produced 4,742,831 pounds of uranium oxide. A total of 3,073,548 tons of ore averaging 1.68 lbs. per ton was milled during the year. The increased tonnage processed reflects the start-up of the new hydrometallurgical plant during the fourth quarter.

The uranium recovery rate of 91.0% was down from 93.3% in 1980 due primarily to lower grade of ore processed and losses sustained while the new plant was being commissioned. Design capacity of the plant of 15,000 tons per day was reached for short periods in December. By year-end, the process control group had identified and corrected several deficiencies in the new plant and recovery was returning to more normal levels. Significant price increases in major reagents used in the hydrometallurgical process have necessitated a thorough review of process requirements.

### Expansion

At year-end the total project involving expansion of the underground mining, processing and housing facilities was more than 75% complete. The remaining work is primarily underground development at No. 3 Shaft and additions to the ventilation systems. The

New hydrometallurgical plant commissioned





Elliot Lake  
expansion project  
more than 75%  
complete

New 3-year  
collective agree-  
ments signed



Ore from the surface  
crusher at No. 2 Shaft is  
transported through  
conveyor galleries to the  
new 20,000 ton coarse  
ore storage capacity  
silo.

All surface construction  
in the uranium  
expansion program at  
Elliot Lake was  
completed in 1981.



All surface construction in uranium expansion at Elliot Lake completed



New hydrometallurgical plant commissioned

Top: The new drum filter area in the extended hydrometallurgical plant separates leached ore from uranium bearing solution.

Bottom: The pebble feed to the mills in the semi-autogenous grinding plant is set by AI Rivers from the instrument control room.



Top: The fully automated system of conveyor belts, transfer cars, measuring bins and skip load-out at No. 2 Shaft is monitored by Christopher Cleary.

Bottom: Run-of-mine ore is reduced in size at the new crusher station underground No. 2 Shaft.



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new production hoist was installed at No. 3 Shaft located on the Stanrock section of the present Denison properties. Development to connect the Stanrock underground workings to the Can-Met shafts with a ventilation airway is progressing well. At the main Denison property new production equipment was received for underground use and the No. 2 Shaft service complex was completed. Enlarging of the Southwest Ventilation Raise was nearly complete at year-end.

### **Environmental Protection**

A significant improvement in the working environment was achieved throughout the operations in 1981. Good ventilation practice, worker education and close monitoring resulted in reduced levels of dust and radiation. Underground, the program of establishing fresh air delivery excavations for mining areas south of No. 2 Shaft remained on schedule, while a major exhaust corridor was established. On surface, completion of a dust collector system in the crushing and grinding plant resulted in a dramatic decrease in dust levels.

As part of a long-range waste management strategy, joint studies are underway with the Atomic Energy Control Board, other government departments, and another mining company on the feasibility of an alternate method of depositing and containing tailings.

### **Industrial and Community Relations**

New collective agreements expiring September 1, 1984 were negotiated with production, maintenance, office and technical employees. The new, competitive wage rates, although increasing the labour cost significantly, have allowed the Company to actively recruit skilled miners and tradesmen during the final quarter of 1981. Results are such that training program costs will be reduced in 1982.

Lost-time accident frequency was held at the Ontario mining industry average, with a reduction of 9% from last year in the frequency of all classifications of incidents requiring medical attention. Of significant interest are provisions in the new collective agreement for increased involvement by the Union in day-to-day safety activities, including the appointment of five full-time company-paid Environment-Safety-Health Inspectors.

As part of the ongoing housing program, an additional 278 units were under construction during the year. It is anticipated that houses built under this phase of the housing assistance program will be ready for occupancy early in 1982. The second part of this final phase of the housing program will commence in the spring of 1982 with 274 additional units to be completed by the end of 1982, bringing the total number of rental units to approximately 2,000.

Denison has continued to maintain its active support of community affairs in Elliot Lake. The Company acknowledges the efforts of its employees who are prominent in community affairs, volunteering many of their leisure hours in support of various social, political, educational and cultural activities so necessary to the lifestyle in northern Ontario.

### **Australia**

Progress continues to be made towards the development of the Koongarra uranium ore bodies. The Australian government approved the Environmental Impact Statement on the development of these deposits located in the South Alligator Region of the Northern Territory. These uranium deposits were acquired by Denison in 1980 and mark the Company's first uranium reserves held outside Canada. Detailed discussions and negotiations are underway with the traditional aboriginal owners of the Koongarra properties. A satisfactory resolution and agreement on royalties and other matters is expected, permitting Denison to proceed with its plan to develop and market the known uranium deposits. The two contiguous ore bodies suitable for open pit mining are estimated to contain about 30 million pounds of uranium oxide.

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**Elliot Lake  
expansion project  
more than 75%  
complete**

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**New 3-year  
collective agree-  
ments signed**



Production in  
Greece and Spain  
will increase in  
1982

In 1981, for the first time in your Company's history, oil and gas production, revenues and earnings from foreign operations surpassed those from Canadian oil and gas operations. In 1982 Denison earnings will be even more positively impacted by increased production from the oil and gas developments in Greece and Spain.

The Prinos/South Kavala project, in which Denison has a 68.75% interest, reached a level of 22,000 barrels of daily oil production and processing in mid-December, 1981. The Casablanca offshore field, in which the Company has a 12.447% unitized interest, is maintaining production at 16,000 barrels daily and is expected to increase to a 45,000 barrel daily rate by late 1982.

During the year Denison expanded its United States activities, particularly in California and in Louisiana both onshore and offshore. Denison has extended its exploration program into Southeast Asia for the first time with the commencement of the drilling of a well in the Philippine waters of the South China Sea.

**Greece**

To date, a total of 1,445,000 barrels of oil has been sold to the Greek Government Aspropyrgos Refinery near Athens. Sales of sulphur to customers in Greece began in early December. A total of 11,000 tons of sulphur has been produced by the mainland plant which can make deliveries in bulk liquid tankers or in solid pellet form. Sales of natural gas also commenced in December. This gas is pipelined to a nearby plant where it is converted into ammonia for use in the manufacture of fertilizer.

Production from the Prinos oil field is currently 24,000 barrels per day from 9 wells. The project target of 25,000 barrels per day will be reached and maintained in 1982 with continuous injection of water to support the pressure in the reservoir.

The Penrod 58 jack-up drilling rig will be retained to drill two planned exploratory wells beyond the limits of the present Prinos reservoir in the Contract area west of the Island of Thassos. Final locations of these exploratory wells are to be determined following a new seismic program. This program will be extended to also include confirmation of several indicated drillable prospects in the Contract area east of the Island of Thassos where a suitable floating drilling vessel will be contracted for exploration drilling.

**Spain**

The first development well to be drilled from the fixed platform which was successfully installed in the Casablanca Field in mid-summer has flowed oil on test at 4,000 barrels per day on 1/2 inch choke and will be completed for production. The three development wells to be drilled from this platform, located in 530 feet of water, are expected to increase production to 45,000 barrels of oil per day by late 1982.

Two oil wells are presently producing on a regular basis at 16,000 barrels per day. These wells will be connected to the fixed platform and the present temporary facilities located on the Afortunada semi-submersible rig will be transferred to this platform and the Afortunada released.

An unsuccessful exploratory well was drilled on the Montanazo "D" Block. However, a detailed engineering study is underway to investigate the eventual exploitation of two separate deep water discoveries made earlier on the Montanazo "C" and "D" Blocks. The deep water will necessitate advanced technology for wellhead design to develop the oil reserves. Other production facilities would be installed on the Casablanca fixed platform.

**Canada**

Denison's oil production in western Canada declined from an average of 4,500 barrels per day in 1980 to 3,550 barrels per day in 1981 while gas sales decreased from 10 million cubic feet per day to 7.9 million cubic feet per day due in part to Alberta production restrictions, a soft gas market and declining production from older wells.

Agreement has been reached between Provincial and Federal Governments relative to

Fixed platform  
successfully  
installed in the  
Casablanca Field





Drilling activity  
continues in the  
United States



Offshore construction  
activity involved the use  
of several service vessels.  
Oil production  
commenced in July,  
1981.

Three platforms are  
linked with bridges  
which also support the  
interconnecting pipe-  
work.



After completing Prinos  
development drilling, the  
Penrod 58 jack-up rig  
will drill exploratory  
wells.

Denison extends  
exploration pro-  
gram into  
Southeast Asia



Prinos/South Kavala Project,  
Greece

Production in  
Greece and Spain  
will increase in  
1982



Fixed platform  
successfully  
installed in the  
Casablanca Field



The mainland crude oil  
processing facilities have  
treated oil at the rate of  
25,000 barrels per day,  
producing oil, sulphur  
and gas for sale.

The plant operates  
24 hours per day.



These installations  
utilize the most  
up-to-date technology.

A modern control room  
monitors and controls  
plant operations.



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Casablanca Project,  
Spain

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This schematic diagram of the Casablanca fixed platform illustrates the facilities necessary to develop the Casablanca offshore oil field in which Denison has a 12.447% interest. The platform is located in 530 feet of water.



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Drilling activity  
continues in the  
United States

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Denison extends  
exploration pro-  
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Southeast Asia









Various stages of the construction and installation of the fixed platform in the Casablanca oil field 30 miles offshore Spain.

Top: The platform jacket which is 560 feet long and weighs 8,600 tons dwarfs all other projects in the construction yard at Cadiz.

Left: A sea-going barge receives the jacket which is moved on rails by powerful winches.

Middle: The jacket is transported to the Casablanca field on a barge towed by the world's largest tug, the "Arctic".

Right: The jacket is off-loaded in preparation for final positioning at the platform site.



Casablanca  
Spain



When the platform was fully assembled, drilling operations were completed, and production was increased from 10,000 barrels to 45,000 barrels per day.

These modules were fabricated to be installed after completion of the platform and are being loaded by a crane ship onto the platform for final hookup.





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the National Energy Program. While the settlements enhance the economics of exploration and development of new oil and gas as defined in specific areas, they unfortunately result in a reduction in producer net revenues derived from existing properties as compared to prior years. In keeping with these marginal economic conditions, exploration and development drilling continued at a comparatively modest rate in Canada.

In Alberta seven successful development wells were drilled at Edson. Additional drilling locations have been selected since development wells at Edson qualify for higher new oil prices. Production and gas conservation facilities are being expanded.

In the Deep Valley (Simonette) area, Denison's holdings were increased to 37,500 gross acres, in which the Company's net share varies between 20% and 25%. Initial drilling on this block resulted in a gas discovery. A second well was unsuccessful. A third exploratory well is planned for early 1982.

### **United States**

*California:* A 15,500-foot well was drilled on the 2,000-acre West Montalvo lease in Ventura County. Special drilling and completion procedures will be required to permit a multi-well development under a continuing drilling program. Denison's interest is 50%.

*Louisiana:* Development drilling was completed on the West Cameron 624 offshore platform. There are now eight gas wells capable of producing from this platform. Completion operations on the wells are well advanced and initial production is expected in early 1982. Denison's interest in the seven gas wells drilled on the West Cameron 624 Block is 19.2% and in the one gas well directionally drilled to Block 625 it is 25%.

Gas production of 5.3 million cubic feet per day is presently being obtained from Ship Shoal Block 320. The other four blocks offshore Louisiana in which Denison has an interest are being explored by seismic for possible future drilling.

Onshore in Louisiana Denison is a 25% cost participant in a 19,500-foot test. Intermediate well logs indicate that the Wilcox formation is potentially oil productive at this location. Tests for commercial production are being carried out.

### **The Philippines**

Denison has joined a drilling venture offshore Palawan Island of the Philippines in the South China Sea area of Southeast Asia. A semi-submersible rig is on location and a well is being drilled to 12,500 feet. Denison will earn a 30.79% interest in this 2.77 million acre permit. Although approximately 100 miles offshore, the well, Sampaguita 3, is located in the Reed Bank area where the water depth is commonly as shallow as 75 feet, making development operations feasible.

### **United Republic of Cameroon**

Seismic operations on Permit PH-33 (Denison, 14.4%) completed during 1981 have led to the selection of a confirmation well location. This well is to be drilled in 1982 near the North Matanda IX gas and condensate discovery made in 1980 on this property. On Permit PH-30 (Denison, 19.8%) an exploratory well, Etinde Marine No. 1, was drilled and abandoned.

### **Guyana**

A 1,300 mile line seismic survey has been completed and results are currently being analyzed. Denison's interest is 50% in this offshore block consisting of 1.86 million acres.

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**Drilling activity continues in the United States**

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**Denison extends exploration program into Southeast Asia**



The past year produced a breakthrough in Denison's long-term plans to become a major coal producer. The signing of sales agreements between Quintette Coal Limited and members of the Japanese steel industry on July 31, 1981 was a major step which led to the immediate commencement of project construction activities. This culminated over a decade of carefully planned effort and investment in establishing the commercial feasibility of development of coal reserves in northeastern British Columbia.

At the same time as these positive steps were taken on the Quintette development, two other projects — Coalspur and Belcourt — were being advanced to enable definitive developmental decisions to be made. It is interesting to note that Denison-managed coal properties in western Canada contain in excess of 7.5 billion tonnes (metric) of coal in place.

### **Quintette Coal Limited**

The present shareholdings of Quintette Coal Limited are: Denison Mines — 45.95%, Mitsui Mining Company Limited — 21.02%, Tokyo Boeki Limited — 21.02% and Charbonnages de France and Minersa — 12.01%.

### *Marketing*

Activities for the sale of Quintette metallurgical coal were successfully concluded with the signing of sales agreements on July 31, 1981 between Quintette Coal Limited and members of the Japanese steel industry. Under the agreements Quintette will sell 5 million tonnes of metallurgical coal per year to Japan over an initial 15 year period, extendable to 20 years. Coal deliveries will commence in late 1983 and will reach 5 million tonnes per year in 1985. The contract price of coal sales as of April 1, 1980 is \$75 (Canadian) per metric tonne F.O.B. vessel. This price will be escalated in line with increases in costs and will also be reviewed periodically in light of market prices for other coals.

High quality thermal coal will also be produced from open pit operations at the rate of 1.5 million tonnes a year. Negotiations for the sale of thermal coal are well advanced with consumers in the international market.

### *Budget*

Field work on development of the Quintette coal property commenced in July, 1981 following the decision by the Quintette Board of Directors to proceed with the project and the approval of an initial capital budget of \$100 million. Approximately \$67 million had been committed by the end of 1981, including \$27 million of construction contracts. These expenditures are only the initial part of the total capital program which, it is estimated, will exceed \$800 million.

Funding for the initial expenditures is being provided by the shareholders of Quintette Coal Limited and a number of banks. Discussions are in progress with leading international banks regarding total long-term financing for the project.

### *Construction*

Essential initial work is well advanced and includes construction of access roads, provision of camps for construction workers, and construction of foundations for the maintenance shops which will be required by mid-1982.

Recruitment of management and technical personnel for this project commenced in mid-1981. The senior staff positions and a number of intermediate staff positions have been filled, and recruiting will be continued as required. A project office was established in Dawson Creek, B.C., in September, 1981 to provide detailed mine planning and supervision of construction work in progress. The engineering, procurement and construction management for the project will be under the direction of Denison Mines in its role as overall project manager.

Coal deliveries to  
commence in late  
1983

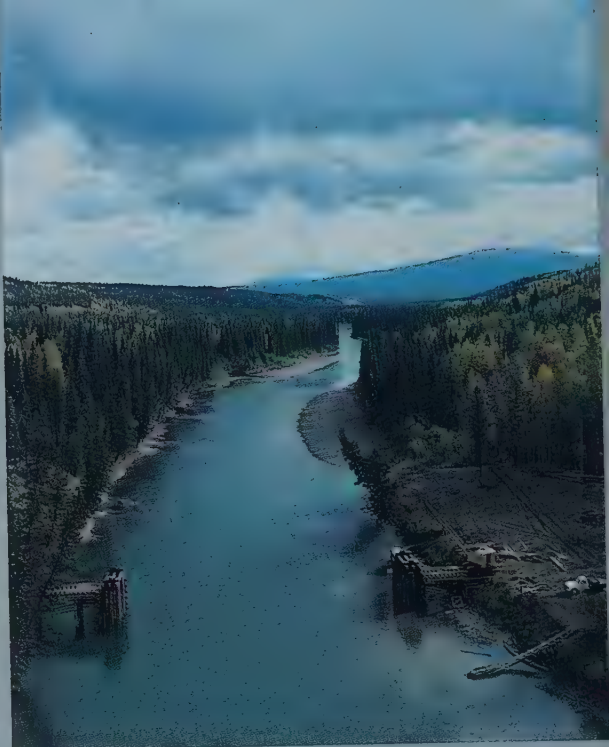
Initial construction  
work at Quintette  
is well advanced





B.C. Rail construction camp at east portal of Wolverine Tunnel.





**Top Left:** Essential initial work on the Quintette project is well advanced. Temporary construction camps have been established, including this one at the process plant site.

**Top Right:** The Murray River bridge crossing near Tumbler Ridge will connect the new town with Chetwynd.

**Bottom:** Foundation work is in progress on the B.C. Hydro Tumbler Ridge sub-station.



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## *Infrastructure*

Under an agreement with the Province of British Columbia construction by the relevant authorities has commenced on various infrastructure items. These include rail, townsite, electric power and roads, all of which are required to serve coal development in the northeastern part of British Columbia. In January, 1982 BC Rail announced that it had awarded contracts amounting to \$173 million for tunnel work on the 129-kilometre branch line from Anzac, B.C., to the new townsite at Tumbler Ridge, B.C.

Negotiations with a company formed by the National Harbours Board and Federal Commerce and Navigation Limited resulted in agreement being reached in early December on the terms and conditions of a terminal throughput agreement. This company will build and finance a new coal terminal at Ridley Island, near Prince Rupert, B.C., to service the northeast B.C. coal development.

The Municipality of Tumbler Ridge has been created to develop land for residential purposes in order to meet the housing needs of the employees required for the coal operations. A town with a population of approximately 6,000 will be required to support the initial coal development planned in the area. The Municipality will construct roads, install all necessary services and make serviced lots available for construction of housing units. Work on the townsite development commenced in late summer of 1981, and installation of services is continuing through the winter with the objective of making serviced lots available for the commencement of housing construction in the spring of 1982.

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**New town of  
Tumbler Ridge  
created**

## **Belcourt**

Field exploration and environmental programs were continued throughout 1981 and preparation of the final feasibility study has been initiated. This study is based on annual production of 4 million tonnes of medium volatile metallurgical coal for 20 years from open pit operations. The final study will be completed prior to December 31, 1982, in accordance with the joint venture agreement with Gulf Canada Resources Inc. which holds a 40% interest in Belcourt. Denison Mines has a 60% interest.

## **Saxon**

During 1981 there were no activities on this property which is owned 70% by Denison Mines and 30% by Mitsui & Co. Ltd., Ruhrkohle A.G. and Usinor.

## **Dentherm Resources Limited**

Dentherm Resources Limited, which holds the Coalspur thermal coal property in northwestern Alberta, is owned 65% by Denison Mines, 15% by Charbonnages de France, and 10% each by Taiwan Power and Denimil Energie und Mineral A.G. Intensive exploration and engineering programs have been conducted by Dentherm Resources during 1981 for the development of the Coalspur property. A full scale feasibility report to select optimum mining areas is scheduled for completion by mid-1982. The initial planned production is 5 million tonnes per year from open pit operations.

Coal sales agreements concluded with Taiwan Power and Charbonnages de France involve the future sale of up to 100 million tonnes of thermal coal over a 20 year period. Depending upon decisions to be taken following completion of the feasibility study, deliveries of coal could start as early as 1985. Negotiations are underway with others for the sale of both coal and an equity interest in the property.

Project staff has been recruited and a project office established in Edmonton, Alberta. This group is preparing the final feasibility study and the documentation necessary to fulfill Alberta government regulations.

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**Thermal coal sales  
agreements con-  
cluded**



### Lake Ontario Cement Limited

Lake Ontario Cement Limited broadened its geographical and product base in 1981 through major acquisitions in the concrete pipe and related products areas. These acquisitions in Ontario and Quebec are part of the company's strategy to achieve long-term growth. Earnings from these acquisitions have helped the company to maintain profitability during the current economic recession in the United States and Canada which has caused a reduction in cement demand and a lowering of profit margins.

Denison has a 54% interest in Lake Ontario Cement Limited which manufactures and markets cement and concrete products in Ontario and Quebec and cement in Michigan and New York State.

Consolidated sales for the 12-month period ended December 31, 1981 were \$114,925,185 up 29% from the 1980 level of \$89,346,673. Consolidated net earnings were \$4,736,800 equal to \$1.10 per share compared with the 1980 level of \$4,856,668 or \$1.13 per share. An extraordinary gain of \$575,325 brought 1980 earnings to \$5,431,993.

The increase in sales was primarily due to inclusion in the consolidated statements of the operations of companies acquired during 1981. Total shipments of cement declined slightly from the 1980 levels, reflecting the depressed level of construction activity. Michigan and Ontario cement shipments declined and margins were particularly affected in Michigan because of depressed selling prices. New York State shipments improved, however, largely offsetting declines in other areas. Shipments in Ontario of ready-mixed concrete were 10% below 1980 levels and profit margins were adversely affected by severe price competition. Concrete block shipments were stable and the market for concrete bricks experienced a strong increase in demand.

The companies acquired as part of Lake Ontario Cement's strategy for growth were: Bestpipe Limited and Duracon Precast Industries Limited, both manufacturers of concrete pipe, manholes and related products with a total of four plants in Ontario and Quebec; Utility Vault Company of Canada Limited, a manufacturer of concrete box culverts with a plant in Guelph, Ontario; and Niagara Ready-Mix Limited, a ready-mix concrete operation located in Niagara Falls, Ontario.

Capital expenditures for the year totalled \$4,124,613 with the major expenditures dedicated to the modernization of cement and concrete operations. Lake Ontario Cement Limited has maintained a healthy financial condition while financing these new acquisitions with a combination of short and long-term debt. Annual dividend payments were increased to a total of 50 cents a share from 45 cents paid in 1980 and 35 cents paid in 1979.

The outlook for 1982 is difficult to forecast because of the expected volatility of interest rates and the current economic recession. Cement and concrete products shipments may be relatively weak in the first half of 1982 but could increase if construction activity strengthens in the second half of the year.

### Reiss Lime Company of Canada Limited

Production and earnings of this company again reached record levels in 1981. As anticipated, the demand for lime in the northern Ontario market grew in 1981 enabling Reiss Lime's operations and sales to increase.

The new lime kiln performed very well at a high production level in its second year of operation. The original kiln has been completely renovated. These strategically located facilities have the capability to increase production of lime for environmental and industrial uses. Dock operations for bulk materials are proceeding well and the outlook for the production and earnings of Reiss Lime Company for 1982 is favourable. Lime demand is expected to continue to grow in 1982 and in the long term.

Major acquisitions made by Lake Ontario Cement Limited

Annual dividend payments increased

Earnings of Reiss Lime reach record levels



A great variety of concrete pipe and related products are manufactured by Lake Ontario Cement's two new acquisitions, Bestpipe Limited and Duracon Precast Industries Limited.





Two Denison geologists, aided by helicopter, perform surveying work in a remote region of the western United States.

The 1981 exploration programs reflected a search for a wide range of essential commodities including base metals, ferro-alloys, uranium and precious metals. Denison operated or participated in 52 exploration programs with 62% of these located in Canada, 35% in the United States and the remainder overseas.

### Canada

Several gold properties, including former producers, have been acquired in traditional gold producing belts in eastern Canada. Geological, geophysical and geochemical surveys as well as diamond drilling are in progress on several of these properties in the Kenora-Dryden area of northwestern Ontario and in the Val d'Or area of northwestern Quebec. The economic potential of these properties will be evaluated in the light of modern geological concepts. Several base metal, ferro-alloy and precious metal properties were evaluated in the Maritime provinces.

In uranium exploration, the major effort was the search for high grade, unconformity type uranium deposits in the Athabasca Basin and the Wollaston Lake fold belt areas of Saskatchewan. This is the area in North America considered most amenable to the discovery of major uranium deposits. These uranium programs were carried out in joint venture with Mitsui & Co. Ltd., Saskatchewan Mining Development Corporation and Westmin Resources Limited.

Several exploration programs were carried out in British Columbia and the Yukon in areas with good potential of containing economic deposits of tungsten, molybdenum and base metals.

### United States

Activities continue to be concentrated on base and precious metals exploration in a number of western states and the Appalachian area of the eastern U.S.

A joint venture with the West German investment company, Denimil Energie und Mineral A.G., has been expanded to include precious metal exploration projects in Nevada, as well as uranium exploration in Utah and precious metal exploration in Montana.

A major base and precious metals exploration program continued with Getty Oil Company in a mid-western state. Intensive diamond drilling was completed to define a massive sulphide discovery. Land acquisition and detailed exploration of a number of massive sulphide targets found through a major airborne geophysical survey is in progress.

Several other joint ventures are under negotiation with major U.S. companies covering ferro-alloy, base and precious metals in the northwestern U.S., and base and precious metals in the southeastern U.S.

### Overseas

The search for attractive exploration opportunities continued in Central and South America, Mexico, Europe and Africa. Detailed examination of several precious and base metal properties was carried out in Peru, Mexico, Chile, Honduras, Spain, Portugal, Austria and Ireland. Exploration activities were initiated throughout Australia by the Sydney office of Denison Australia Pty. Ltd., with land positions established at two locations in Western Australia.

**Denison participates in 52 exploration programs**

**Search for mineral deposits continues worldwide**



The potash project in New Brunswick has reached the key point of the first stage of development. Lateral underground exploration will commence in early 1982 as the exploration shaft approached the salt-potash horizon below 2,400 feet in January, 1982. This detailed examination of the deposit will provide the geological and mine planning information that is required to complete the final feasibility study for the project. Drilling from surface had indicated the presence of more than 200 million tons of high-grade potash which would support an annual production rate of 1.0 to 1.5 million tons.

The detailed feasibility study will be completed by June, 1982. Full-scale construction and development of a production operation could then proceed quickly with a start-up target of mid-1984.

Denison has a 60% interest in Denison-Potacan Potash Company which is developing this deposit. Potash Company of Canada which has the remaining 40% is owned by Entreprise Minière et Chimique of France and Kali und Salz Aktiengesellschaft of West Germany.

### **First Development Stage**

During the year progress in sinking the first shaft was delayed by the occurrence of intensely-fractured water-bearing horizons. It was necessary to seal this problem zone by the injection of cement and chemicals. The sealing was carried out in 100-foot increments over a 300-foot depth, permitting the 16-foot diameter concrete lined shaft to proceed.

Early in 1982 an exploration station and a loading pocket will be excavated in the anhydrite bed below the salt. The lateral exploration program which will follow immediately will consist primarily of openings made by a potash boring machine across part of the deposit and along a portion of its length. This boring machine will cut an initial opening 7.5 feet high by 13 feet wide. Subsequently, this opening will be widened at selected intervals to accommodate other equipment and to prepare locations for core drilling in order to outline in detail the shape and extent of the potash deposit.

The underground exploration program will utilize sophisticated proprietary geophysical equipment, made available by our West German partner, to delineate the extent of the salt-potash horizons. This radar equipment will also be used as required during development and production to provide more precise control over potash mining.

### **Planning for Production**

The construction of facilities for shipping potash from the nearby Port of Saint John has started following the recent award of a contract by the National Harbours Board. A shiploading basin is to be dredged and land reclaimed for the storage and loading installations. The potash produced at the Sussex area property will have ready access through these port facilities to the growing world markets for this necessary ingredient in fertilizers.

A pilot hole for the production shaft required for the second stage of development was drilled on the centre of the proposed shaft location in order to obtain the true conditions for the shaft sinking which will follow. The results correlate well with the present shaft and provide a proper basis for determining shaft design and sinking procedures. Installation of the facilities for the sinking of the production shaft can be made quickly as all the necessary preparations have been made.


Environmental operating conditions are being reviewed and planned in conjunction with Environment New Brunswick and Environment Canada for the present exploration program and for continuation through the development and construction stages leading to production.

## INVESTMENTS

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Standard Trustco's  
eleventh year of  
earnings' growth

Pacific Tin's  
earnings improve  
significantly



Mechanics conduct a last  
check on a massive  
potash boring machine  
which will be lowered to  
the underground station  
to cut openings through  
the potash deposit.



POTASH

Completion of  
feasibility study by  
mid-1982

Underground  
exploration to  
commence early in  
1982



Pacific Tin's Malaysia  
operation utilizes this  
dryer to remove  
moisture from cassiterite  
tin concentrates before  
they are bagged for  
shipment to a smelter

*Standard Trustco Limited* continued to achieve excellent results in 1981. This was the eleventh consecutive year of significant growth in earnings and assets. Despite volatile interest rates and an uncertain economic environment, net income more than doubled, reaching \$3,871,000 for the year. Much of this increase can be attributed to the company's guaranteed fund operations and careful attention to matching the term of investments and deposits.

At December 31, 1981 total assets had surpassed the half billion dollar mark, amounting to \$508,686,000, 45% higher than the previous year's \$350,962,000. Loans for the purchase of income-averaging annuity contracts provided a major contribution to asset growth during the year.

To provide a sound financial base for sustained growth, a rights offering under which common shareholders could purchase one additional share at \$35 per share for every four shares held was completed on November 6, 1981, generating \$5,185,810 of new equity. Denison subscribed for 82,755 shares of the total 148,166 shares taken up, bringing its interest to 49.2% from 47.2%.

Standard Trustco now has a total of nineteen branches. During 1981, branches were opened in Saskatoon and Regina, Saskatchewan and Port Perry, Ontario. The Port Perry office has experienced remarkable deposit growth since it opened in June.

Reflecting this continued strong performance, Standard Trustco raised its annual dividend rate to \$1.30 per share in 1981 from \$1.00 per share in 1980 and \$0.60 per share in 1979.

*Pacific Tin Consolidated Corporation* is experiencing significantly improved earnings as a result of increased investment income and a strong recovery in metal powders, partially offset by lower contributions from tin and industrial minerals. Consolidated net income for the first nine months of 1981 totalled U.S. \$1,414,000, up 36% from U.S. \$1,042,000 for the corresponding 1980 period. Dividends for the year were maintained at U.S. \$1.00 per share, the same rate as in 1980.

In Malaysia, considerably lower tin prices were primarily responsible for a reduced earnings contribution from operations. From January to September, 1981, total shipments of 1,015,000 pounds were down only marginally from the 1,028,000 pounds shipped in the first nine months of 1980. However, average prices realized of U.S. \$6.15 per pound were down 19% from the corresponding 1980 level of U.S. \$7.60 per pound. More recently the price of tin has been rising on world markets, having reached U.S. \$7.10 per pound in late December in Penang, Malaysia.

The short recovery in housing construction early in the year enabled Feldspar Corporation, the company's industrial minerals operation, to generate revenue of U.S. \$15,600,000 by September 30, 1981, an 8% increase over the same nine months of 1980. However, earnings in the period were somewhat below the corresponding 1980 level.

Improved markets caused significantly increased demand for metal powders, raising 1981's first nine months shipments 39% to 14,600,000 pounds and sales 43% to U.S. \$5,000,000.

*Consolidated Rexspar Minerals & Chemicals Limited* has mineral properties in British Columbia on which a seven year provincial moratorium prevents uranium exploration until 1987. Certain of Consolidated Rexspar's Birch Island, B.C., properties also have potential for other minerals. Consolidated Rexspar has recently arranged a four year exploration and possible development program with a major B.C. mining company which has committed to spend up to \$1,500,000 on exploration over the next four years in order to maintain an option to acquire a majority interest in this property in the event of a discovery of significant mineralization.

**Standard Trustco's  
eleventh year of  
earnings' growth**

**Pacific Tin's  
earnings improve  
significantly**



# PRINCIPAL JOINT VENTURES

## Oil and Gas

Project	Denison Ownership	Principal Partners
Prinos/South Kavala, Greece	68.75%	<i>Fluor Oil &amp; Gas, Wintershall AG, Basic Resources</i>
Casablanca, Spain	12.45%	<i>ENIEPSA, Chevron, Canada Northwest Land, Petro-Canada, CIEPSA, Amoco</i>
Quintette, British Columbia	45.95%	<i>Mitsui Mining Co. Ltd., Tokyo Boeki Ltd., Charbonnages de France, Minersa</i>
Belcourt, British Columbia	60.00%	<i>Gulf Canada Resources Inc.</i>
Saxon, British Columbia	70.00%	<i>Mitsui &amp; Co. Ltd., Ruhrkohle AG, Usinor</i>
Coalspur, Alberta	65.00%	<i>Charbonnages de France, Denimil Energie und Mineral AG, Taiwan Power Company</i>
Sussex, New Brunswick	60.00%	<i>Entreprise Miniere et Chimique, Kali und Salz AG</i>

## Other Operations

## Cement

Firm	Denison Ownership
Lake Ontario Cement Limited	53.63%
Aetna Cement Corporation	100.00%*
Rochester Portland Cement Corp.	100.00%*
Pacific Tin Consolidated Corporation	40.00%
Reiss Lime Company of Canada Limited	50.00%
Roman Corporation Limited	15.00%
Standard Trustco Limited	49.21%

## Exploration and Development

Argosy Mining Corporation Limited	37.06%
Black Hawk Mining Inc.	32.51%
Canray Resources Limited	14.05%
Caspian Resources Limited	16.47%
Consolidated Rexspar Minerals & Chemicals Limited	46.91%
Parlake Resources Limited	19.46%

\*Percentage held by Lake Ontario Cement Limited

*Consolidated  
Financial  
Statements*

For the Year Ended  
December 31, 1981



## FINANCIAL REVIEW AND ANALYSIS OF OPERATIONS

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*The Five Year Summary included on page 45 of this report highlights the key operating and financial results of the Company from 1977 to 1981.*

**Sales** — In 1981, consolidated gross revenue totalled \$427,564,380, a new record, increasing 17% or \$62,411,097 from the 1980 level. As in 1980, oil and gas revenues were greatly increased. This resulted from the commencement of commercial production from the Prinos oil field offshore Greece in which the Company has a 68.75% interest and increased production of and improved prices for oil from the Casablanca field offshore Spain where the Company's interest is 12.447%. Increased sales of cement and concrete products resulting from four acquisitions during the year account for the balance of the increase in gross revenue.

**Earnings** — Net earnings of \$62,385,796 were recorded, the second highest in the Company's history. This represents a reduction of \$11,312,961 or 15% from the record earnings of \$73,698,757 in 1980. In 1981, earnings were adversely affected by the settlement in respect of the Westinghouse and Tennessee Valley Authority litigations, higher uranium production costs and increased interest expense which were only partially offset by an increase in oil and gas and other income.

**Capital Spending** — During 1981, investment in plant, equipment, employee housing and resource property development amounted to \$398,629,113, the second highest in the Company's history. Over the last five years, capital expenditures have totalled \$1,196,203,565 as a major uranium mine-mill expansion, together with related housing, was undertaken at Elliot Lake; the Prinos oil field and neighbouring South Kavala gas field in the Aegean Sea offshore Greece were developed; and major new potash and uranium properties, in New Brunswick and Australia respectively, were acquired. In 1981, these efforts culminated in the completion of the new milling facilities at Elliot Lake and the bringing into commercial production of the Greek oil and gas interests. Preparation of the potash and Koongarra uranium properties for development is continuing while development of the Quintette coal properties in northeastern British Columbia has commenced. As a result of this considerable capital spending program, net fixed assets increased 41% during the year to reach \$1,217,182,178 by December 31, 1981.

**Taxes** — The effective income and mining tax rate applied to the Company's earnings was substantially reduced from 40.3% in 1980 to 36.6% in 1981. The decrease in the effective tax rate in 1981 is due primarily to a higher level of income which is taxed on a capital gains basis and a substantial decrease in the rate of Ontario mining tax.

**Financial Position** — During 1981, funds generated from current operations amounted to \$65,171,060 while new advances against uranium concentrate sales contracts relating to the expansion of the Elliot Lake facilities contributed \$56,858,345. Additional long-term debt issued to complete funding of the Company's share of the cost of bringing the Prinos/South Kavala oil and gas project into production, together with small increases in Lake Ontario Cement Limited and other long-term debt, provided a total of \$164,737,684. Disposition of interests in several of the Company's resource properties, of long-term investments and of fixed assets resulted in net proceeds of \$230,975,670. After fixed asset additions of \$398,629,113, dividend payments to shareholders totalling \$36,545,768, long-term investment purchases amounting to \$153,671,157, and funds of \$20,866,843 and \$8,872,211 used to reduce outstanding long-term debt and advances against sales contracts respectively, working capital decreased \$101,767,362.

**Total Assets** — Total assets increased by 38% in 1981 to reach \$1,480,001,129, mainly as a result of the Company's continuing Elliot Lake expansion program and development of oil and gas operations on a world wide basis. The stage has been set to continue this growth performance with the development of the Company's coal operations.

## ACCOUNTING POLICIES

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*Denison Mines Limited for the year ended December 31, 1981*

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*The accounting policies of the Company are in accordance with generally accepted accounting principles. Outlined below are those policies considered particularly significant for the Company.*

**Basis of Consolidation** — The consolidated financial statements include the accounts of the Company and all subsidiaries. The Company's exploration, development and production activities related to oil and gas and an increasing proportion of such activities related to mining are conducted jointly with others; these consolidated financial statements include only the Company's proportionate interest in the accounts of these joint activities, conformed to the policies followed by the Company.

**Translation of Foreign Currencies** — Foreign currencies have been translated into Canadian dollars as follows: current assets and liabilities at rates in effect at the end of the year; non-current assets and liabilities and revenue and expenditure items at approximate rates in effect at dates of transactions, except for depreciation and depletion which are translated at the same rates as the related assets.

**Inventories** — Concentrates and finished and semi-processed cement products are valued at the lower of average cost of production and net realizable value. Crude oil ready for shipment is valued at current selling prices. Raw materials and supplies are valued at the lower of average cost and replacement cost.

**Long-term Investments** — Investments in companies in which the Company has significant influence are accounted for by the equity method, by which the original cost of the shares is adjusted for the Company's share of earnings or losses less dividends since significant influence was acquired. The treatment of expenditures of mining companies in the exploration stage has been conformed in these consolidated financial statements to the policy followed by the Company. Portfolio investments are carried at cost. All long-term investments are written down to their estimated inherent worth when there is evidence of a permanent decline below their carried value.

### **Fixed Assets, Depreciation and Depletion**

— **Plant, Equipment and Housing** — Plant, equipment and housing are recorded at cost and depreciated, generally on a straight-line basis, over their estimated useful lives except that (a) plant and equipment at the Company's mine properties acquired before 1965 were written off in prior years and (b) oil and gas production equipment is depreciated by the unit of production method.

— **Mineral Properties (Mining, Oil and Gas)** — Each group of permits, licences or leases in a designated exploration or development area is accounted for as a separate area of interest. All exploration costs relating to each area of interest are written off in the year incurred. If it is determined that an area of interest contains economically recoverable reserves, all costs relating to that area for the current and subsequent years, including development costs incurred for the purpose of expansion, are deferred. These deferred costs, together with property acquisition costs, are amortized against related production revenues by the unit of production method based on the area's estimated proven reserves or written off if that property is abandoned.

— **Capitalization of Interest** — Interest costs (net) on funds borrowed to finance the development and construction of major assets are capitalized during the development and construction period.

**Income and Mining Taxes** — The Company follows the tax allocation method of accounting whereby the provision for income and mining taxes is based upon income reported in the accounts.

The benefits arising from the investment tax credit provisions of the Income Tax Act are treated as a reduction of the income tax provision for the year in which expenditures are incurred.



## CONSOLIDATED BALANCE SHEET

### Assets

*Denison Mines Limited as at December 31, 1981*

	1981	1980
<i>Current Assets</i>		
Cash and short-term deposits	\$ 20,062,622	8,421,650
Accounts receivable	90,992,094	69,398,743
Income and mining taxes recoverable	—	501,164
Concentrate inventories	383,177	81,871
Cement product inventories	12,560,099	8,586,000
Crude oil inventories	7,386,484	313,000
Raw materials, supplies and prepaid expenses	35,869,004	28,231,355
	167,253,480	115,533,783
<i>Long-term Investments (note 2)</i>	92,982,135	93,434,050
<i>Fixed Assets (note 3)</i>	1,217,182,178	862,887,156
<i>Other Assets</i>	2,583,336	2,656,196
	<u>\$1,480,001,129</u>	<u>\$1,074,511,185</u>

## AUDITORS' REPORT

To the Shareholders of Denison Mines Limited

We have examined the consolidated balance sheet of Denison Mines Limited as at December 31, 1981 and the consolidated statements of earnings and retained earnings and changes in financial position for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these consolidated financial statements present fairly the financial position of the Company as at December 31, 1981 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Toronto, Canada  
January 13, 1982

Coopers & Lybrand  
Chartered Accountants

Liabilities

	1981	1980
<i>Current Liabilities</i>		
Bank indebtedness	\$ 171,987,747	\$ 74,027,881
Accounts payable and accrued charges	103,392,883	65,711,130
Dividends payable	628,157	1,575,515
Income and mining taxes payable	3,103,244	—
Advances on concentrate sales contracts	8,872,211	10,016,000
Long-term debt (note 5(b))	20,866,843	4,033,500
	308,851,085	155,364,026
<i>Advances on Concentrate Sales Contracts</i>	258,786,798	210,800,664
<i>Long-term Debt (note 5)</i>	464,557,810	320,686,969
<i>Minority Interest in Subsidiary Companies</i>	20,748,472	19,549,851
<i>Deferred Income and Mining Taxes (note 4)</i>	181,422,173	148,314,912
	1,234,366,338	854,716,422

Shareholders' Equity

<i>Capital Stock</i>		
Authorized — 24,000,000 shares without par value		
Issued and fully paid — 18,272,884 shares	4,568,221	4,568,221
<i>Contributed Surplus</i>	7,937,764	7,937,764
<i>Retained Earnings</i>	233,128,806	207,288,778
	245,634,791	219,794,763
	\$1,480,001,129	\$1,074,511,185

Signed on behalf of the Board

B. E. Willoughby, Director

E. B. McConkey, Director



CONSOLIDATED STATEMENT OF  
EARNINGS AND RETAINED EARNINGS

*Denison Mines Limited for the year ended December 31, 1981*

	1981	1980
<i>Gross Revenue</i>	\$427,564,380	\$365,153,283
<i>Operating and Exploration Costs</i>	366,925,429*	260,876,670
	60,638,951	104,276,613
<i>Other Income (note 6)</i>	85,068,666	46,239,400
	145,707,617	150,516,013
<i>General Corporate Expense</i>	14,227,612	14,650,315
<i>Interest (note 5(g))</i>	29,567,700	8,098,123
<i>Earnings Before Taxes and Minority Interest</i>	101,912,305	127,767,575
<i>Income and Mining Taxes (note 4)</i>	37,330,000	51,550,000
<i>Earnings Before Minority Interest</i>	64,582,305	76,217,575
<i>Minority Interest</i>	2,196,509	2,518,818
<i>Net Earnings for the Year</i>	62,385,796	73,698,757
<i>Balance of Retained Earnings — Beginning of Year</i>	207,288,778	160,999,346
	269,674,574	234,698,103
<i>Dividends</i>	36,545,768	27,409,325
<i>Balance of Retained Earnings — End of Year</i>	\$233,128,806	\$207,288,778
<i>Earnings per Share for the Year</i>	\$3.41	\$4.03

\* Includes \$17,600,000 of litigation settlements.

CONSOLIDATED STATEMENT OF  
CHANGES IN FINANCIAL POSITION

*Denison Mines Limited for the year ended December 31, 1981*

	1981	1980
<i>Sources of Working Capital</i>		
Provided from operations	\$ 65,171,060	\$109,925,120
Increase in advances on concentrate sales contracts	56,858,345	81,213,090
Issue of long-term debt	164,737,684	187,685,902
Net proceeds on sale of long-term investments, interests in mineral ventures and fixed assets (note 6)	230,975,670	74,820,732
Other	72,859	468,671
	<u>517,815,618</u>	<u>454,113,515</u>
<i>Uses of Working Capital</i>		
Additions to fixed assets	398,629,113	406,486,668
Reduction in advances on concentrate sales contracts	8,872,211	10,016,000
Reduction of long-term debt	20,866,843	4,033,500
Purchase of long-term investments	153,671,157	83,324,688
Dividends to minority shareholders of Lake Ontario Cement Limited	997,888	898,721
Dividends	36,545,768	27,409,325
Other	—	944,687
	<u>619,582,980</u>	<u>533,113,589</u>
<i>Decrease in Working Capital</i>	<u>\$101,767,362</u>	<u>\$ 79,000,074</u>



## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

### *Derison Mines Limited for the year ended December 31, 1981*

#### 1. Accounting Policies

The information on page 35 presents a summary of significant accounting policies and is an integral part of these consolidated financial statements.

#### 2. Long-term Investments

(a) Investment in companies accounted for by the equity method —

Shares (quoted market value 1981 — \$24,256,474;

1980 — \$23,425,854)

Debentures

	1981	1980
Shares (quoted market value 1981 — \$24,256,474; 1980 — \$23,425,854)	\$19,470,734	\$14,475,302
Debentures	800,000	800,000
	<u>20,270,734</u>	<u>15,275,302</u>

Portfolio investments —

Shares (quoted market value 1981 — \$70,735,197;

1980 — \$86,904,084)

Secured loans

Shares (quoted market value 1981 — \$70,735,197; 1980 — \$86,904,084)	71,711,401	60,501,824
Secured loans	1,000,000	17,656,924
	<u>72,711,401</u>	<u>78,158,748</u>
	<u>\$92,982,135</u>	<u>\$93,434,050</u>

(b) The quoted market values referred to above do not necessarily reflect the realizable value of these holdings which may be more or less than that indicated by market quotations.

#### 3. Fixed Assets

	Cost at December 31, 1981	Accumulated depreciation, depletion and amortization to December 31, 1981	Amount written off in 1981
Land	\$ 17,048,115	\$ —	\$ —
Mining properties	96,075,854	1,251,801	63,496
Oil and gas properties	50,106,930	6,212,456	834,261
Plant and equipment	720,603,244	164,444,629	30,226,798
Deferred development	398,343,520	21,351,750	10,109,833
Employee housing	51,419,271	5,493,991	1,819,595
Construction in progress	82,339,871	—	—
	<u>\$1,415,936,805</u>	<u>\$198,754,627</u>	<u>\$43,053,983</u>

Mining and oil and gas properties and deferred development are amortized by the unit of production method. Plant, equipment and housing are depreciated at annual rates which vary from 2.5% to 33.3%. Accumulated depreciation, depletion and amortization at December 31, 1980 amounted to \$158,436,055.

#### 4. Income and Mining Taxes

The deferred income and mining tax provision for the year amounted to \$33,107,261 (1980 — \$44,167,242).

5. Long-Term Debt	1981	1980
(a) Prinos Oil Field and South Kavala Gas Field project, Sea of Thrace		
Project and overrun loan facility (note 5(c))	\$197,678,250	\$171,904,054
Supplementary project financing facility (note 5(c))	121,027,500	89,810,521
Additional credit agreement (note 5(d))	90,350,990	—
	409,056,740	261,714,575
Elliot Lake housing mortgages at rates varying from 8% to 12% maturing from 2004 to 2028	43,963,670	44,209,894
Lake Ontario Cement Limited and subsidiaries (note 5(e))	24,044,282	18,196,000
Quintette Coal Limited (note 5(f))	8,205,926	—
Other	—	600,000
	485,270,618	324,720,469
Repayable within one year (note 5(b))	20,712,808	4,033,500
	<u>\$464,557,810</u>	<u>\$320,686,969</u>

(b) The long-term debt repayable within one year converts to \$20,866,843 when translated at current exchange rates. If current exchange rates were used for the remaining long-term debt, it would increase by \$2,092,886.

(c) Under an agreement made in 1979, the Company and the other members of the consortium developing the Prinos Oil Field and the South Kavala Gas Field in the Sea of Thrace have borrowed \$U.S.215,000,000 under a project loan and \$U.S.30,000,000 under an overrun loan facility; the amounts of such borrowings to constitute project loans and overrun loans respectively will be determined by the members of the consortium, but the amount of the project loans is not to exceed \$U.S.215,000,000. Under an agreement made in 1980, the consortium members have borrowed \$U.S.150,000,000 under a limited recourse supplementary project financing facility to provide additional financing for such development. The Company's interest in the Fields and its share of the liability in respect of the loans are both 68.75%. The Company's share of the loans under both such arrangements as of December 31, 1981 amounted to \$318,705,750 (\$U.S.271,562,500). The facilities being constructed and all the interests of the consortium members in the Fields have been or will be mortgaged or charged as security for the loans but no security will be given for the loans under the supplementary project financing facility until all the project loans and overrun loans have been repaid. After the facilities have been constructed and the Fields have reached specified levels of operations (the "recourse date"), the project loans and a portion, not yet determinable, of the loans under the supplementary project financing facility (the "limited recourse portion") are to be repayable only out of production and the above security granted to the lenders, except that the borrowers will remain liable in the event of certain specified losses including certain uninsured losses, principally a loss caused by hostilities. The borrowers will be fully liable for the overrun loans and the balance of the loans under the supplementary project financing facility.

Other significant details concerning these loans are as follows:

	Maturity date	Minimum repayments*	Interest rates	
			Initially	After the "recourse date"
Project loans	July 15, 1986	Nine half-yearly instalments to commence July 15, 1982	LIBOR** plus 1.5%	LIBOR plus 1.9375%
Overrun loans	July 15, 1986	Six half-yearly instalments to commence January 15, 1984	LIBOR plus 1.5%	LIBOR plus 1.5%
"Limited recourse portion" of the loans under the supplementary project financing facility	January 16, 1987	Six half-yearly instalments to commence July 16, 1984	LIBOR plus .5%	LIBOR plus .75%
Balance of the loans under the supplementary project financing facility	January 16, 1987	Six half-yearly instalments to commence July 16, 1984	LIBOR plus .5%	LIBOR plus .5%

\* The minimum repayments may, under certain provisions, be accelerated.

\*\* LIBOR means London Interbank Eurodollar Market rate from time to time.



(d) Under an additional credit agreement made in 1981, the Company borrowed \$U.S.75,000,000 to provide further financing for the development of the Prinos Oil Field and the South Kavala Gas Field in the Sea of Thrace. The loans ("additional loans") under such additional credit agreement will mature on July 17, 1986 and will be repayable in three annual instalments: \$U.S.18,750,000 on July 17, 1984 and July 17, 1985 and \$U.S.37,500,000 on July 17, 1986. There are provisions permitting earlier repayment in certain circumstances. After the facilities have been constructed and the Fields have reached specified levels of operations the Company may specify that a portion or the whole of the additional loans (the amount which may be specified not yet being determinable) is or are to be repayable only out of production and security on the Company's interest in the Fields, which security will only be given upon the repayment of the loans referred to in note 5(c), except that the Company may remain liable in the event of certain specified losses including certain uninsured losses, principally a loss caused by hostilities. The Company will be fully liable for any balance of the additional loans not so specified. The rate of interest on the additional loans is LIBOR (as referred to in note 5(c)) plus .25% up to October 31, 1982 and thereafter plus .375%, or in respect of additional loans specified as referred to above plus .625%.

(e) The long-term debt of Lake Ontario Cement Limited and subsidiaries, most of which is secured on those companies' assets, consists of (a) a \$11,200,000 debenture at 9.75%, due 1994, payable in annual instalments of \$860,000 and (b) a term bank loan, promissory notes and mortgages aggregating \$12,844,282 due up to 1990 with interest between 8% and Canadian prime.

(f) The long-term debt of Quintette Coal Limited consists of a bank loan and interest thereon. The loan matures in 1984 and bears interest at a rate selected by the borrower, from time to time, equal to any of LIBOR (as referred to in note 5(c)), the U.S. base rate or Canadian prime, plus margins of up to .75%.

(g) Interest on long-term debt expensed in 1981 amounted to \$19,465,937 and in 1980 to \$5,513,240.

(h) The repayments of long-term debt, including minimum repayments of the debts described in (c) and (d) above, required in 1982 are \$20,866,843, in 1983 are \$34,277,398, in 1984 are \$93,835,126, in 1985 are \$119,468,929 and in 1986 are \$147,259,381.

#### 6. Other Income

	1981	1980
Gain on sale of interests in mineral ventures, net of commission	\$35,448,447	\$23,244,000
From companies accounted for by the equity method — income (loss)	2,335,832	(1,536,347)
From portfolio investments —		
Gain on disposal of securities	33,301,126	10,856,370
Dividends and interest	4,948,155	3,652,787
Gain on sale of fixed assets	5,270,943	—
Other interest income	3,764,163	3,778,910
Net proceeds received from Getty Oil Company for relinquishing rights under an agreement with Reserve Oil and Gas Company and for other considerations	—	6,243,680
	<u>\$85,068,666</u>	<u>\$46,239,400</u>

#### 7. Commitments and Contingencies

(a) Under its agreement with Ontario Hydro for the sale and delivery of uranium oxide between now and the year 2012, which agreement is subject to certain provisions as to specified curtailments or reductions and as to termination, the Company is continuing the major expansion of its plant and mine facilities at Elliot Lake. The utility is continuing to make advances to the Company of substantially all the cost of the expansion and will be repaid over the delivery period. The amount outstanding at December 31, 1981 with respect to the advances is \$248,457,803. The Company's Elliot Lake operating properties, facilities and certain other assets related thereto have been mortgaged or charged as security for the funds advanced subject to the Company's right to give prior security in certain circumstances.

(b) The Company is participating in the construction and installation of production and processing facilities with respect to four exploration and development areas, two (the Prinos Oil Field and the South Kavala Gas Field) in the Sea of Thrace, one (the Casablanca Oil Field) in the Mediterranean, offshore Spain and one in the Gulf of Mexico. The remaining cost to complete such construction and installation is estimated at \$U.S.138,000,000 in 1981 dollars, the Company's share of which would be \$U.S.26,000,000.

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(c) The Company is participating in the development and construction of a coal mine in northeastern British Columbia by Quintette Coal Limited ("Quintette"). The total project costs are currently estimated to exceed \$800,000,000, of which the Company's share would approximate \$370,000,000. The infrastructure commitments by the Government of the Province of British Columbia for road, rail and townsite facilities in the province are secured until the completion of the project by a debenture of \$600,000,000 issued by Quintette, of which the Company's share is \$276,000,000. This debenture creates a floating charge on the assets of Quintette, subject to Quintette's right to give prior security in certain circumstances.

(d) Other major projects authorized as of December 31, 1981 will require estimated capital and exploration expenditures of \$82,000,000.

(e) In 1980, the Company acquired all the right, title and interest of the vendor with respect to certain uranium-bearing properties in the Northern Territory of Australia including a property known as the Koongarra Deposits. A portion of the purchase price has been paid and an additional amount, based upon estimated economic production of uranium oxide from the Koongarra Deposits, is payable upon the making of a firm production decision. In addition, the Company must pay the vendor additional amounts in respect of uranium oxide extracted by underground mining methods from a specified deposit in the Koongarra Deposits or recovered by any method from the other properties. Certain approvals and agreements must be obtained before any of these properties may be developed and in connection therewith the Company will be required to reduce its interest to permit Australian participation.

(f) The Company, together with others, has been charged under Section 32(1)(c) of the Combines Investigation Act (Canada) that it did conspire, combine, agree or arrange with others to prevent or lessen, unduly, competition in the production, manufacture, purchase, sale or supply in Canada of uranium, uranium oxide and other uranium substances between September 1, 1970 and April 1, 1978. If found guilty of having committed such an offence prior to January 1, 1976, the Company would be subject to a fine in an amount in the discretion of the Court. The fine for an offence subsequent to December 31, 1975 is not to exceed \$1,000,000. The Company is of the opinion that it has a good defence to the charge against it and is defending itself against the charge.

(g) The Company is a defendant in various other lawsuits as at December 31, 1981. While the amount of any ultimate liability cannot yet be determined, the Company is of the opinion that there will be no material adverse effect on its financial position.

(h) Based on the most recent actuarial evaluations, unfunded past service pension liabilities of the Company amount to \$7,588,843. This amount is being funded and expensed over periods from 9 to 16 years. The total charge against operations in 1981 with respect to past service liabilities amounted to \$877,073 including interest.

#### **8. Remuneration of Directors and Senior Officers**

Direct remuneration received by the directors and senior officers in 1981 amounted to \$2,473,084 (1980 — \$1,719,900).

#### **9. Related Party Transactions**

The Company obtains services from firms in which non-executive directors of the Company are partners or officers. Payments for such services, principally legal fees, security brokerage commissions and real estate fees, did not exceed one-half of one percent of gross revenue and other income.

The Company incurs costs, principally with respect to the rental of its head office premises and the time of its officers and staff, which benefit various of its associated companies. Reasonable charges are made to those companies with respect to such costs.

#### **10. Comparative Data**

Certain of the 1980 comparative data have been reclassified to conform to the 1981 presentation.

#### **11. Segmented Information**

This note is presented on the following page.



## NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

### Denison Mines Limited for the year ended December 31, 1981

#### 11. Segmented Information

Operations are in the following industries:

**Mining** — primarily involves mining, milling and sale of uranium oxide, together with exploration, development and marketing of various types of minerals.

**Oil & Gas** — exploration, development, production and sale of natural gas, oil, condensates and sulphur.

**Cement** — manufacture and sale of cement, ready mixed concrete and concrete products.

Industry Data	Mining (Principally Uranium)		Oil & Gas		Cement		Total	
	1981	1980	1981	1980	1981	1980	1981	1980
Gross Revenue	\$230,435,381	232,179,081	82,203,695	43,627,529	114,925,304	89,346,673	427,564,380	365,153,283
Operating Profit	\$ 14,374,317 *	80,779,878	32,716,077	11,735,716	13,548,557	11,761,019	60,638,951 *	104,276,613
Identifiable Assets	\$613,807,587	461,165,058	635,303,247	402,093,241	107,935,879	87,739,071	1,357,046,713	950,997,370
Corporate Assets							122,954,416	123,513,815
Total Assets							\$1,480,001,129	\$1,074,511,185
Capital Expenditure	\$150,493,119	185,035,131	230,721,095	209,001,597	13,840,223	2,622,197		
Depreciation, Depletion and Amortization	\$ 16,665,230	10,963,286	20,763,462	8,434,614	4,630,736	4,016,453		
Geographic Data								
	Canada		Europe		Rest of World		Total	
	1981	1980	1981	1980	1981	1980	1981	1980
Gross Revenue	\$320,341,110	303,923,049	61,917,431	19,290,219	45,305,839	41,940,015	427,564,380	365,153,283
Operating Profit (Loss)	\$ 37,643,624 *	107,714,349	39,113,227	11,819,492	(16,117,900)	(15,257,228)	60,638,951 *	104,276,613
Identifiable Assets	\$794,998,307	638,477,386	558,789,755	338,334,573	126,213,067	97,699,226	1,480,001,129	1,074,511,185
Export Sales							\$ 218,382,892	\$ 224,679,416

\* After deducting \$17,600,000 of litigation settlements.

## FIVE YEAR SUMMARY

### *Denison Mines Limited and its Subsidiaries*

<b>PRODUCTION DATA</b>	<b>1981</b>	<b>1980</b>	<b>1979</b>	<b>1978</b>	<b>1977</b>
Tons milled	3,074,000	2,510,000	2,440,000	2,404,000	2,059,000
Average grade (lbs. U <sub>3</sub> O <sub>8</sub> per ton)	1.68	1.87	2.03	2.15	2.07
Pounds U <sub>3</sub> O <sub>8</sub> produced	4,743,000	4,452,000	4,496,000	4,889,000	4,001,000
Crude oil (bbls.)	2,859,000	2,249,000	1,593,000	1,658,000	1,688,000
Natural gas (mcf)	5,092,000	5,504,000	3,828,000	3,393,000	3,149,000

### CONSOLIDATED FINANCIAL DATA

Sales	\$427,564,380	\$365,153,283	\$310,508,336	\$269,888,785	\$199,062,733
Net earnings for the year	62,385,796	73,698,757	56,092,061	58,241,136	27,878,009
— per share*	3.41	4.03	3.07	3.19	1.53
Dividends paid	36,545,768	27,409,325	21,927,461	33,804,836**	10,050,086
— per share*	2.00	1.50	1.20	1.85**	0.55
Working capital (deficiency)	(141,597,605)	(39,830,243)	39,169,831	48,868,077	(3,263,692)
Additions to fixed assets	398,629,113	406,486,668	261,635,658	73,393,948	56,058,178
Shareholders' equity	245,634,791	219,794,763	173,505,331	139,340,731	114,904,431
— per share*	13.44	12.03	9.50	7.63	6.29

\*After adjusting for the four-for-one subdivision of shares effective February 23, 1979.

\*\*Includes a special dividend of \$1.25 per share paid in 1978 out of 1971 capital surplus on hand.





OFFICERS AND CORPORATE STAFF

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Stephen B. Roman, K.C.S.G., LL.D.  
Chairman and President,  
Chief Executive Officer

E. B. McConkey  
Vice-Chairman

C. H. Frame  
President,  
Mining Operations

C. D. Parmelee  
Executive Vice-President,  
Corporate Affairs

M. H. Cochrane  
Executive Vice-President,  
Finance and Administration

R. C. Hermann  
Vice-President,  
Coal Operations

L. L. Samoil  
Vice-President,  
Oil and Gas Operations

M. J. de Bastiani  
Vice-President,  
Technical Operations

W. N. O'Brien  
Vice-President,  
Minerals and Marketing

A. F. Risso  
Vice-President,  
Administration

K. H. Bates  
Vice-President

C. G. Fullerton  
Treasurer

K. H. Barnes  
Controller

M. J. Anderson  
General Counsel  
and Secretary

DIRECTORS

---

Donald S. Anderson

M. J. de Bastiani

Charles F. W. Burns

C. H. Frame

John Kostuik

E. B. McConkey

John A. Mullin, Q.C.

Joseph A. Patrick

Stephen B. Roman

Stephen G. Roman

Helen Roman-Barber

George Rowe, Jr.

B. E. Willoughby



## CORPORATE DIRECTORY

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### Corporate Headquarters

Royal Bank Plaza  
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P.O. Box 40  
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Canada M5J 2K2  
Telephone (416) 865-1991  
Telex 065-24135 (Denmines Tor)

### Elliot Lake Office

Uranium Division  
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Telephone (705) 848-9111  
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### Calgary Office

Oil & Gas Division  
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444-5th Avenue S.W.  
Calgary, Alberta T2P 2T8  
Telephone (403) 269-4327  
Telex 038-25739 (Denmines Cgy)

### Coal Division

Vancouver Office  
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Vancouver Centre  
650 West Georgia Street  
Vancouver, B.C. V6B 4N7  
Telephone (604) 669-2226  
Telex 045-1547 (Denmines Vcr)

Dawson Creek Office  
1508 102 Ave.  
Dawson Creek, B.C. V1G 2E2  
Telephone (604) 782-1371  
Telex 036-77140 (Quintette Dck)

Edmonton Office  
Suite 209  
17420 Stony Plain Road  
Edmonton, Alta. T5S 1K6  
Telephone (403) 483-1883  
Telex 037-42532 (Denison Edm)

### New Brunswick Office

Potash Project  
P.O. Box 638  
Sussex, New Brunswick E0E 1P0  
Telephone (506) 839-2146  
Telex 014-47541 (Denmines Clhl)

### Denison Mines (U.S.)

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Denver, Colorado 80203  
Telephone (303) 839-5239  
Telex 004-5762 (Denmines Dvr)

### Greece

Prinos/South Kavala Project  
North Aegean Petroleum Company  
2, Kapadistriou St. and Kiffissias Ave.  
Filothei  
Athens, Greece  
Telephone 6814,442  
Telex 218315 (Napc Gr)

### Australia

Denison Australia Pty. Limited  
Suite 3501  
North Point  
100 Miller Street  
North Sydney  
Australia  
Telephone (02) 922-2055  
Telex 71-71009 (Denaus)

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### Registrar and Transfer Agent

Guaranty Trust Company of Canada,  
Toronto, Montreal, Calgary

### Auditors

Coopers & Lybrand,  
Toronto, Ontario

### Bankers

The Royal Bank of Canada,  
Toronto, Ontario

### Solicitors

Fraser & Beatty,  
Toronto, Ontario





